

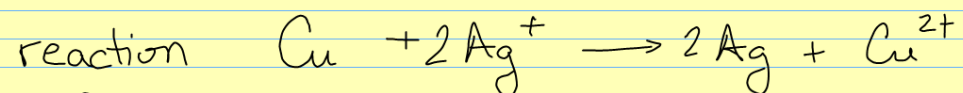
Galvanic Cells

May 31, 2011.

A galvanic cell is a device that converts the chemical energy of a redox reaction into electrical energy.

A galvanic cell works by separating the two halves of a redox reaction.

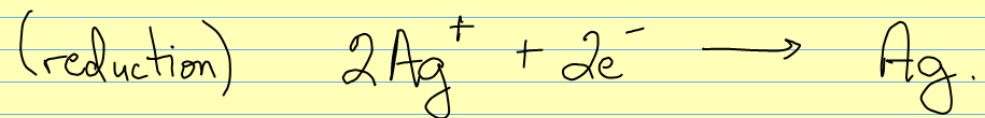
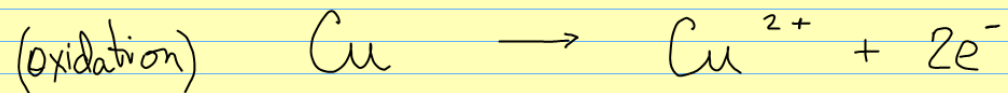
For example when copper metal is placed in a solution of silver ions, the



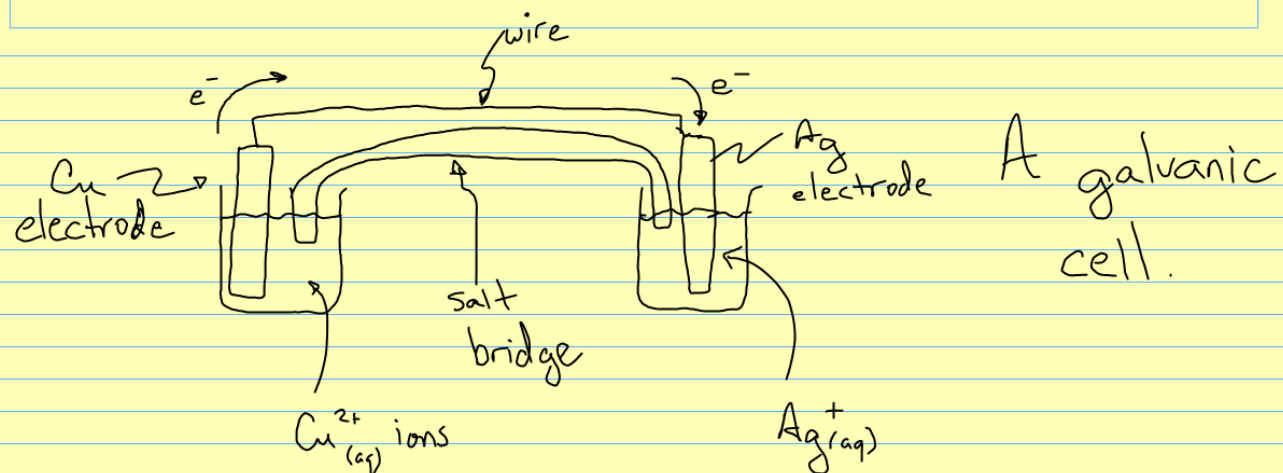
If we separate the copper



part of the reaction from the silver part we get:



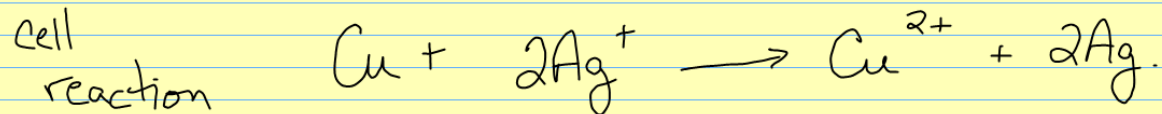
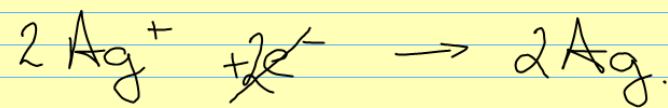
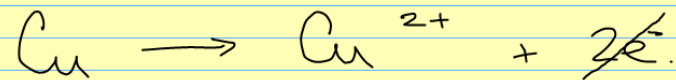
So if the silver and copper parts of the reaction are physically separated, then the electrons have to move from the copper part to the silver part.



Each compartment of the galvanic cell is called a half-cell. The reaction in each cell is a half-cell reaction. The electrode where oxidation occurs is the anode. Reduction occurs at the cathode.

Cell Reactions.

A cell reaction is the overall reaction occurring in the two half cells. An important rule for creating cell reactions is that the electrons must balance. For example in the copper - silver cell the half reactions are:



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